TEST REPORT

UL 61010-1

Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General requirements

Report Number.....:	LST250998018LR
Date of issue.....:	Sep. 19, 2025
Total number of pages.....:	66 pages
Name of Testing Laboratory.....:	Shenzhen LST Technology Co., Ltd.
Address.....:	Huichao Building, Yintian Industry zone, Bao'an District, Shenzhen, Guangdong P.R. China
Applicant's name.....:	Shenzhen Shichao Electronic Technology Co., Ltd
Address.....:	3rd Floor, Building 2, Shenzhen Energy Technology Park, No. 103 Huangpu East Ring Road, Xinqiao, Baoan District, Shenzhen
Test specification	
Standard.....:	IEC 61010-1:2010, AMD1:2016
Test procedure .....:	Test report
Non-standard test method .....:	N/A
Test Report Form	
Test Report Form No.....:	IEC61010_1P
Test Report Form(s) Originator.....:	VDE Prüf- und Zertifizierungsinstitut GmbH
Master TRF.....:	Dated 2021-04-12

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General disclaimer:

The test results presented in this report relate only to the object tested.

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Test item description.....:	AI intelligent controller
Trademark.....:	N/A
Manufacturer.....:	Shenzhen Shichao Electronic Technology Co., Ltd
Address.....:	3rd Floor, Building 2, Shenzhen Energy Technology Park, No. 103 Huangpu East Ring Road, Xinqiao, Baoan District, Shenzhen
Model/Type reference.....:	SC-128 WiFi SC-158 WiFi, SC-7 WiFi, SC-319 WiFi, SC-350E WiFi
Ratings.....:	AC 110V-240V, 16A, 3300W, 50-60Hz

Testing procedure and testing location:

Testing Laboratory.....:	Shenzhen LST Technology Co., Ltd.
Address.....:	Huichao Building, Yintian Industry zone, Bao'an District, Shenzhen, Guangdong P.R. China
Tested by (name + signature).....:	
Reviewed by (name + signature).....:	
Approved by (name + signature).....:	

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List of Attachments (including a total number of pages in each attachment - Table 1):		
Document No.	Documents included / attached to this report (description)	Number of pages
1	US NATIONAL DIFFERENCES	12
2	Photo documentation	6

Documents referenced by this report (available on request):		
Document Name or No.	Documents description	Page Numbers
None		

Summary of testing:

The product has been assessed as a unit in its own right to ensure it satisfies the requirements of IEC 61010-1 +A1 prior to general use.

Test Report History:

This report may consist of more than one report and is only valid with additional or previous issued reports:

Report Ref. No.	Item
None	

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Tests performed (name of test and test clause):	**Testing location:**
Based on general product information, full tests were carried out on model SC-128 WiFi. The submitted samples fulfilled the requirements of specified standards.	Shenzhen LST Technology Co., Ltd. Huichao Building, Yintian Industry zone,Bao'an District, Shenzhen, Guangdong P.R. China

Summary of compliance with National Differences (List of countries addressed):

US NATIONAL DIFFERENCES

☒ The product fulfils the requirements of UL 61010-1:2012 Ed.3+R: Nov. 15, 2024

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☐ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

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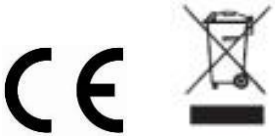
Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

AI intelligent controller
Model No.: SC-128 WiFi
AC 110V-240V, 16A, 3300W, 50-60Hz



Manufacturer: Shenzhen Shichao Electronic Technology Co., Ltd
Address: 3rd Floor, Building 2, Shenzhen Energy Technology Park, No. 103 Huangpu East Ring Road, Xinqiao, Baoan District, Shenzhen
Made in China

Remark on above marking:

1, Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.

2, The height of CE symbols is more than 5 mm;

3, The height of WEEE symbols is more than 7 mm;

4, The height of letters and numerals is more than 2 mm;

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Test item particulars..... :	
Type of item.....:	Class I
Description of equipment function.....:	Appliance power cord
Connection to MAINS supply.....:	Detachable cord set
Overvoltage category.....:	II
Pollution degree.....:	2
Protection class.....:	Class I
Environmental conditions.....:	Extended (Specify): 40°C, 95%
Equipment mobility.....:	
Operating conditions.....:	Continuous
Overall size of equipment (W x D x H).....:	Appliance power cord
Mass of equipment (kg).....:	Appliance power cord
Marked degree of protection to IEC 60529.....:	Appliance power cord
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item.....:	Aug. 27, 2025 - Sep. 19, 2025
Date (s) of performance of tests.....:	Sep. 19, 2025
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☒ comma / ☐ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	Same as manufacturer
General product information: 1. Appliance for household and indoor use only. 2. All models are identical except model name and dimension. 3. The test results in the report only apply to the tested sample.	

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
4	**Tests**		
4.4	Testing in SINGLE FAULT CONDITIONS		N/A
4.4.1	General		N/A
4.4.2	Application of fault conditions		N/A
4.4.2.1	single fault conditions covered by 4.4.2.2 to 4.4.2.14.		N/A
4.4.2.2	PROTECTIVE IMPEDANCE		N/A
4.4.2.3	Protective conductor		N/A
4.4.2.4	Equipment or parts for short-term or intermittent operation		N/A
4.4.2.5	Motors		N/A
	– stopped while fully energized		N/A
	– prevented from starting		N/A
	– one phase interrupted (multi-phase)		N/A
4.4.2.6	Capacitors		N/A
4.4.2.7	MAINS transformers		N/A
4.4.2.7.2	Short circuit		N/A
4.4.2.7.3	Overload		N/A
4.4.2.8	Outputs		N/A
4.4.2.9	Equipment for more than one supply		N/A
4.4.2.10	Cooling		N/A
	a) air holes closed		N/A
	b) fans stopped		N/A
	c) coolant stopped		N/A
	d) loss of cooling liquid		N/A
4.4.2.11	Heating devices		N/A
	a) timer overridden		N/A
	b) temperature controller overridden		N/A
4.4.2.12	Insulation between circuits and parts		P
4.4.2.13	Interlocks		N/A
4.4.2.14	Voltage selectors		N/A
4.4.3	Duration of tests		N/A
4.4.4	Conformity after application of fault conditions		N/A

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
5	**Marking and documentation**		
5.1	Marking		P
5.1.1	General		P
	Required equipment markings		—
	– visible from the exterior; or		P
	– visible after removing cover or opening door		N/A
	– visible after removal from a rack or panel		N/A
	Not put on parts which can be removed by an operator		P
	Letter symbols (IEC 60027) used		P
	Graphic symbols (IEC 61010-1: Table 1) used		P
5.1.2	Identification		P
	Equipment is identified by:		—
	a) Manufacturer's or supplier's name or trademark		P
	b) Model number, name or other means		P
	Manufacturing location identified		N/A
5.1.3	MAINS supply		P
	Equipment is marked as follows:		—
	a) Nature of supply:		—
	1) a.c.: RATED MAINS frequency or range of frequencies……:		—
	2) d.c. with symbol 1		—
	b) RATED supply voltage(s) or range……:		—
	c) Max. RATED power (W or VA) or input current:		—
	The marked value not less than 90 % of the maximum value		P
	If more than one voltage range:		—
	Separate values marked; or		N/A
	Values differ by less than 20 %		N/A
	d) OPERATOR-set for different RATED supply voltages:		—
	Indicates the equipment set voltage		N/A
	Portable equipment indication is visible from the exterior		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Changing the setting changes the indication		N/A
	e) Accessory MAINS socket-outlets accepting standard MAINS plugs are marked:		—
	With the voltage if it is different from the MAINS supply voltage .....:		—
	For use only with specific equipment		N/A
	If not marked for specific equipment it is marked with:		—
	The maximum rated current or power; or		N/A
	Symbol 14 with full details in the documentation		N/A
5.1.4	Fuses		N/A
	Operator replaceable fuse marking (see also 5.4.5) .....:		—
5.1.5	TERMINALS, connections and operating devices		P
5.1.5.1	General		—
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked		P
	If insufficient space, symbol 14 used		N/A
	Push-buttons and actuators of emergency stop devices and indicators:		—
	– used only to indicate a warning of danger; or		N/A
	– the need for urgent action		N/A
	– coloured red		N/A
	– coded as specified in IEC 60073		N/A
	Supplementary means of coding provided, if meaning of colour relates (see IEC 60073):		—
	– to safety of persons; or		N/A
	– safety of the environment		N/A
5.1.5.2	TERMINALS		—
	MAINS supply TERMINAL identified		P
	Other TERMINAL marking:		—
	a) FUNCTIONAL EARTH TERMINALS (symbol 5 used)		P
	b) PROTECTIVE CONDUCTOR TERMINALS:		—
	Symbol 6 is placed close to or on the TERMINAL; or		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Part of appliance inlet		N/A
	c) TERMINALS of control circuits (symbol 7 used)		P
	d) HAZARDOUS LIVE TERMINALS supplied from the interior		N/A
	Standard MAINS socket outlet; or		N/A
	RATINGS marked; or		N/A
	Symbol 14 used		N/A
5.1.6	Switches and circuit breakers		P
	If disconnecting device, off position clearly marked		P
	If push-button used as power supply switch:		—
	– symbol 9 and 15 used for on-position		P
	– symbol 10 and 16 used for off-position		P
	– pair of symbols 9, 15 and 10, 16 close together		N/A
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION		P
	Protected throughout (symbol 11 used)		N/A
	Only partially protected (symbol 11 not used)		P
5.1.8	Field-wiring TERMINAL boxes		N/A
	If TERMINAL or ENCLOSURE exceeds 60°C:		—
	Cable temperature RATING marked .....:		—
	Marking visible before and during connection or beside TERMINAL		N/A
5.2	Warning markings		P
	Visible when ready for NORMAL USE		P
	Are near or on applicable parts		P
	Symbols and text correct dimensions and colour:		—
	a) symbols min 2,75 mm and text 1,5 mm high and contrasting in colour with background		P
	b) symbols and text moulded, stamped or engraved in material min. 2,0 mm high and		P
	0,5 mm depth or raised if not contrasting in colour		P
	If necessary marked with symbol 14		N/A
	Statement to isolate or disconnect if access by using a tool to HAZARDOUS LIVE parts is permitted		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
5.3	Durability of markings		P
	The required markings remain clear and legible in NORMAL USE		P
5.4	Documentation		P
5.4.1	General		P
	Equipment is accompanied by documentation for safety purposes for OPERATOR or RESPONSIBLE BODY		P
	Safety documentation for service personnel authorized by the manufacturer		P
	Documentation necessary for safe operation is provided in printed media or		P
	in electronic media if available at any time		P
	Documentation includes:		—
	a) intended use		P
	b) technical specification		P
	c) name and address of manufacturer or supplier		P
	d) information specified in 5.4.2 to 5.4.6		P
	e) information to mitigate residual RISK (see also subclause 17)		P
	f) accessories for safe operation of the equipment specified		P
	g) guidance provided to check correct function of the equipment, if incorrect reading may cause a HAZARD from harmful or corrosive substances of HAZARDOUS live parts		P
	h) instructions for lifting and carrying		P
	Warning statements and a clear explanation of warning symbols:		—
	– provided in the documentation; or		P
	– information is marked on the equipment		P
5.4.2	Equipment ratings		P
	Documentation includes:		—
	a) Supply voltage or voltage range .....:		—
	Frequency or frequency range .....:		—
	Power or current rating .....:		—

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Clause	Requirement - Test	Result - Remark	Verdict
	b) Description of all input and output connections in accordance to 6.6.1 a)		P
	c) RATING of insulation of external circuits in accordance to 6.6.1 b)		P
	d) Statement of the range of environmental conditions (see 1.4)		P
	e) Degree of protection (IEC 60529)		N/A
	f) If impact rating less than 5 J:		—
	IK code in accordance to IEC 62262 marked; or		N/A
	symbol 14 of table 1 marked, with		N/A
	RATED energy level and test method stated		N/A
5.4.3	Equipment installation		P
	Documentation includes instructions for:		—
	a) assembly, location and mounting requirements		P
	b) protective earthing		P
	c) connections to supply		P
	d) PERMANENTLY CONNECTED EQUIPMENT:		—
	1) Supply wiring requirements		N/A
	2) If external switch or circuit-breaker, requirements and location recommendation		N/A
	e) ventilation requirements		P
	f) special services (e. g. air, cooling liquid)		N/A
	g) instructions relating to sound level		N/A
5.4.4	Equipment operation		P
	Instructions for use include:		—
	a) identification and description of operating controls		P
	b) positioning for disconnection		P
	c) instructions for interconnection		P
	d) specification of intermittent operation limits		N/A
	e) explanation of symbols used		P
	f) replacement of consumable materials		N/A
	g) cleaning and decontamination		P
	h) listing of any poisonous or injurious gases and quantities		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	i) RISK reduction procedures relating to flammable liquids (see 9.5)		N/A
	j) RISK reduction procedures relating burn from surfaces permitted to exceed limits of 10.1		N/A
	Additional precautions for IEC 60950 conforming equipment in regard to moistures and liquids		N/A
	A statement about protection impairment if used in a manner not specified by the manufacturer		N/A
5.4.5	Equipment maintenance and Service		P
	Instructions for RESPONSIBLE BODY include:		—
	Instructions sufficient in detail permitting safe maintenance and inspection and continued safety:		—
	Instruction against the use of detachable MAINS supply cord with inadequate rating		P
	Specific battery type of user replaceable batteries		N/A
	Any manufacturer specified parts		P
	Rating and characteristics of fuses		P
	Instructions include following subjects permitting safe servicing and continued safety:		—
	a) product specific RISKS may affect service personnel		P
	b) protective measures for these RISKS		P
	c) verification of the safe state after repair		P
5.4.6	Integration into systems or effects resulting from special conditions		N/A
	Aspects described in documentation		N/A
6	**PROTECTION AGAINST ELECTRIC SHOCK**		P
6.1	General	(see Form A.14 and A.15)	P
6.1.1	Requirements		P
	Protection against electric shock maintained in NORMAL CONDITION and SINGLE FAULT CONDITION		P
	ACCESSIBLE parts not HAZARDOUS LIVE		P
	Voltage, current, charge or energy below the limits in NORMAL CONDITION and in SINGLE FAULT CONDITION between:		—
	ACCESSIBLE parts and earth		P

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Clause	Requirement - Test	Result - Remark	Verdict
	two ACCESSIBLE parts on same piece of the equipment within a distance of 1,8 m		P
	Conformity is checked by the determination of 6.2 and 6.3 followed by the tests of 6.4 to 6.11		P
6.1.2	Exceptions		N/A
	Following HAZARDOUS LIVE parts may be ACCESSIBLE to an OPERATOR:		—
	a) parts of lamps and lamp sockets after lamp removal		N/A
	b) parts to be replaced by OPERATOR only by the use of tool and warning marking		N/A
	Those parts not HAZARDOUS LIVE 10 s after interruption of supply		N/A
	Capacitance test if charge is received from internal capacitor		N/A
6.2	Determination of ACCESSIBLE parts		P
6.2.1	General		P
	Unless obviously determination of ACCESSIBLE parts as specified in 6.2.2 to 6.2.4		P
6.2.2	Examination		P
	– with jointed test finger (as specified B.2)		P
	– with rigid test finger (as specified B.1) and a force of 10 N		P
6.2.3	Openings above parts that are HAZARDOUS LIVE		P
	– test pin with length of 100 mm and 4 mm in diameter applied		P
6.2.4	Openings for pre-set controls		N/A
	– test pin with length of 100 mm and 3 mm in diameter applied		N/A
6.3	Limit values for ACCESSIBLE parts		P
6.3.1	Levels in NORMAL CONDITION		—
	a) Voltage limits less than 30 V r.m.s. and 42,4 V peak or 60 V d.c.		P
	for WET LOCATIONS voltage limits less than 16 V r.m.s. and 22,6 V peak or 35 V d.c.		P
	Voltages are not HAZARDOUS LIVE the levels of:		—

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Clause	Requirement - Test	Result - Remark	Verdict
	b) Current less than 0,5 mA r.m.s. for sinusoidal, 0,7 mA peak for non-sinusoidal or mixed frequencies or 2 mA d.c. when measured with measuring circuit A.1 or A.2 if less than 100 Hz		P
	for WET LOCATIONS measuring circuit A.4 used		P
	70 mA r.m.s. when measured with circuit A.3 for higher frequencies		P
	or		—
	c) Levels of capacitive charge or energy less:		—
	1) 45 µC for voltages up to 15 kV peak or d.c. or line A of Figure 3		N/A
	2) 350 mJ stored energy for voltages above 15 kV peak or d.c.		N/A
6.3.2	Levels in SINGLE FAULT CONDITION		—
	a) Voltage limits less than 50 V r.m.s. and 70 V peak or 120 V d.c.		P
	for WET LOCATIONS voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.		P
	Voltages are not HAZARDOUS LIVE the levels of:		—
	b) Current less than 3,5 mA r.m.s. for sinusoidal, 5 mA peak for non-sinusoidal or mixed frequencies or 15 mA d.c. when measured with measuring circuit A.1 or A.2 if less than 100 Hz		P
	for WET LOCATIONS measuring circuit A.4 used		P
	500 mA r.m.s. when measured with circuit A.3 for higher frequencies		P
	or		—
	c) Levels of capacitive charge or energy less line B of Figure 3		N/A
6.4	Primary means of protection		P
6.4.1	ACCESSIBLE parts prevented from being HAZARDOUS LIVE by one or more of following means:		—
	a) ENCLOSURES or PROTECTIVE BARRIERS (see 6.4.2)		P
	b) BASIC INSULATION (see 6.4.3)		P
	c) Impedance (see 6.4.4)		P
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS	(see Form A.15)	—

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Clause	Requirement - Test	Result - Remark	Verdict
	– meet rigidity requirements of 8.1		P
	– meet requirements for BASIC INSULATION, if protection is provided by insulation		P
	– meet requirements of 6.7 for CREEPAGE and CLEARANCES between ACCESSIBLE parts and HAZARDOUS live parts, if protection is provided by limited access		P
6.4.3	BASIC INSULATION	(see Form A.15)	—
	– meet CLEARANCE , CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.4.4	Impedance		—
	Impedance used as primary means of protection meets all of following requirements:		—
	a) limits current or voltage to level of 6.3.2	(see Form A.6)	P
	b) RATED for maximum WORKING VOLTAGE and the amount of power it will dissipate		P
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of BASIC INSULATION of 6.7	(see Form A.15)	P
6.5	Additional means of protection in case of SINGLE FAULT CONDITION		P
6.5.1	ACCESSIBLE parts are prevented from becoming HAZARDOUS live by the primary means of protection and supplemented by one of:		—
	a) PROTECTIVE BONDING (see 6.5.2)		P
	b) SUPPLEMENTARY INSULATION (see 6.5.3)		P
	c) automatic disconnection of the supply (see 6.5.5)		N/A
	d) current- or voltage-limiting device (see 6.5.6)		P
	Alternatively one of the single means of protection is used:		—
	e) REINFORCED INSULATION (see 6.5.3)		P
	f) PROTECTIVE IMPEDANCE (see 6.5.4)		P
6.5.2	PROTECTIVE BONDING		P
6.5.2.1	ACCESSIBLE conductive parts, may become HAZARDOUS LIVE in SINGLE FAULT CONDITION:		—
	Bonded to the PROTECTIVE CONDUCTOR TERMINAL; or		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Separated by conductive screen or barrier bonded to PROTECTIVE CONDUCTOR TERMINAL		N/A
6.5.2.2	Integrity of PROTECTIVE BONDING		—
	a) PROTECTIVE BONDING consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses		P
	b) Soldered connections:		—
	Independently secured against loosening		P
	Not used for other purposes		P
	c) Screw connections are secured		P
	d) PROTECTIVE BONDING not interrupted; or		P
	exempted as removable part carries MAINS SUPPLY input connection		P
	e) Any movable PROTECTIVE BONDING connection specifically designed, and meets 6.5.2.4		N/A
	f) No external metal braid of cables used (not regarded as PROTECTIVE BONDING)		N/A
	g) IF MAINS SUPPLY passes through:		—
	Means provided for passing protective conductor;		P
	Impedance meets 6.5.2.4		P
	h) Protective conductors bare or insulated, if insulated, green/yellow		P
	Exceptions:		—
	1) earthing braids;		N/A
	2) internal protective conductors etc.;		N/A
	Green/yellow not used for other purposes		P
	TERMINAL suitable for connection of a PROTECTIVE CONDUCTOR, and meets 6.5.2.3		P
6.5.2.3	PROTECTIVE CONDUCTOR TERMINAL		—
	a) Contact surfaces are metal		P
	b) Appliance inlet used		P
	c) For rewirable cords and PERMANENTLY CONNECTED EQUIPMENT, PROTECTIVE CONDUCTOR TERMINAL is close to MAINS supply TERMINALS		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	d) If no MAINS supply is required, any PROTECTIVE CONDUCTOR TERMINAL:		—
	Is near terminals of circuit for which protective earthing is necessary		N/A
	External if other terminals external		N/A
	e) Equivalent current-carrying capacity to MAINS supply TERMINALS	(see Form A.7)	P
	f) If plug-in, makes first and breaks last		P
	g) If also used for other bonding purposes, PROTECTIVE CONDUCTOR:		—
	Applied first;		P
	Secured independently;		P
	Unlikely to be removed by servicing		P
	h) PROTECTIVE CONDUCTOR of measuring circuit:		—
	1) Current RATING equivalent to measuring circuit TERMINAL;		P
	2) PROTECTIVE BONDING: not interrupted by any switch or interrupting device		P
	i) FUNCTIONAL EARTH TERMINALS allow independent connection		P
	j) If a binding screw used for PROTECTIVE CONDUCTOR TERMINAL:		P
	Suitable size for bond wire		P
	Not smaller than M 4		—
	At least 3 turns of screw engaged		—
	Passes tightening torque test		P
	k) Contact pressure not capable being reduced by deformation of materials		N/A
6.5.2.4	Impedance of PROTECTIVE BONDING of plugconnected equipment	(see Form A.9)	—
	Impedance between PROTECTIVE CONDUCTOR TERMINAL and each ACCESSIBLE part where PROTECTIVE BONDING is specified, is:		—
	– less than 0,1 Ohm; or		P
	– less than 0,2 Ohm if equipment is provided with non-detachable cord		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
6.5.2.5	Bonding impedance of PERMANENTLY CONNECTED EQUIPMENT		—
6.5.2.6	Transformer PROTECTIVE BONDING screen		—
	Transformer provided with screen for PROTECTIVE BONDING:		—
	screen bonding consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses (see 6.5.2.2 a)		N/A
	screen bonding with soldered connection (see 6.5.2.2 b) is:		N/A
	– Independently secured against loosening		N/A
	– Not used for other purposes		N/A
6.5.3	SUPPLEMENTARY and REINFORCED INSULATION		P
	Meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.5.4	PROTECTIVE IMPEDANCE		P
	Limits current or voltage to level of 6.3.1 in NORMAL and to level of 6.3.2 in SINGLE FAULT CONDITION		P
	CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of DOUBLE or REINFORCED INSULATION of 6.7	(see Form A.15)	P
	The PROTECTIVE IMPEDANCE consists of one or more of the following:	(see TABLE 1)	—
	a) appropriate single component suitable for safety and reliability for protection, it is:		—
	1) RATED twice the maximum WORKING VOLTAGE		P
	2) resistor RATED for twice the power dissipation for maximum WORKING VOLTAGE		N/A
	b) combination of components		P
	Single electronic device not used as PROTECTIVE IMPEDANCE		P
6.5.5	Automatic disconnection of the supply		N/A
	a) RATED to disconnect the load within time specified in Figure 2		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	b) RATED for the maximum load conditions of the equipment		N/A
6.5.6	Current- or voltage-limiting devices		P
	Device complies with all of:		—
	a) RATED to limit the current or voltage to the level of 6.3.2	(see Form A.6)	P
	b) RATED for the maximum WORKING VOLTAGE; and		P
	RATED for the maximum operational current if applicable		P
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of SUPPLEMENTARY INSULATION of 6.7	(see Form A.14, A.15)	P
6.6	Connections to external circuits		N/A
6.6.1	Connections do not cause ACCESSIBLE parts of the following to become HAZARDOUS LIVE in NORMAL CONDITION or SINGLE FAULT CONDITION:		—
	– the external circuits		N/A
	– the equipment		N/A
	Protection achieved by separation of circuits; or		N/A
	short circuit of separation does not cause a HAZARD		N/A
	Instructions or markings for each terminal include:		—
	a) RATED conditions for TERMINAL		N/A
	b) Required RATING of external circuit insulation		N/A
6.6.2	TERMINALS for external circuits		N/A
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE after 10 s of interrupting supply connection	(see Form A.5)	N/A
6.6.3	Circuits with terminals which are HAZARDOUS LIVE		N/A
	These circuits are:		—
	Not connected to ACCESSIBLE conductive parts; or		N/A
	Connected to ACCESSIBLE conductive parts, but are not MAINS CIRCUITS and have one TERMINAL contact at earth potential		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	No ACCESSIBLE conductive parts are HAZARDOUS LIVE		N/A
6.6.4	ACCESSIBLE terminals for stranded conductors		N/A
	No RISK of accidental contact because:		—
	– Located or shielded		N/A
	ACCESSIBLE TERMINALS will not work loose		N/A
6.7	Insulation requirements	(see Form A.14)	P
6.7.1	The nature of insulation		—
6.7.1.1	Insulation between ACCESSIBLE parts or between separate circuits consist of CLEARANCES, CREEPAGE DISTANCES and solid insulation if provided as protection against a HAZARD		P
6.7.1.2	CLEARANCES		—
	Required CLEARANCES reflecting factors of 6.7.1.1	(see Form A.14 and A.15)	P
	Equipment rated for operating altitude greater than 2000 m correction factor of Table 3 of 61010-1 applied		N/A
6.7.1.3	CREEPAGE DISTANCES		—
	Required CREEPAGE DISTANCES reflecting factors of 6.7.1.1 a) to d)	(see Form A.14 and A.15)	P
	CTI material group reflected by requirements		P
	CTI test performed		N/A
6.7.1.4	Solid insulation		—
	Required solid insulation reflecting factors of 6.7.1.1 a) to d)	(see Form A.14 and A.15)	P
6.7.1.5	Requirements for insulation according to type of circuit	(see Form A.14 and A.15)	—
	a) 6.7.2 MAINS circuits of OVERVOLTAGE CATEGORY II up to nominal supply voltage of 300 V		P
	b) 6.7.3 secondary circuits separated from circuits defined in a) by transformer		P
	c) K.1 MAINS circuits of OVERVOLTAGE CATEGORY III and IV or OVERVOLTAGE CATEGORY II over 300 V		N/A
	d) K.2 secondary circuits separated from circuits defined in c) by transformer		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	e) K.3 circuits having one or more of:		—
	1) maximum TRANSIENT OVERVOLTAGE is limited to known level below the level of MAINS CIRCUIT		N/A
	2) maximum TRANSIENT OVERVOLTAGE above the level of MAINS CIRCUIT		N/A
	3) WORKING VOLTAGE is the sum of more than one circuit or a mixed voltage		N/A
	4) WORKING VOLTAGE includes recurring peak voltage, may include non-sinusoidal or non-periodic waveform		N/A
	5) WORKING VOLTAGE with a frequency above 30 kHz		N/A
6.7.2	Insulation for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II with a nominal supply voltage up to 300 V		P
6.7.2.1	CLEARANCES and CREEPAGE DISTANCES	(see Form A.14 and A.15)	—
	Values for MAINS CIRCUITS of Table 4 are met		P
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.2.2	Solid insulation		—
6.7.2.2.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		P
	Equipment passed voltage tests of 6.8.3 with values of Table 5	(see Form A.18)	P
	Complies as applicable:		—
	a) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		P
	b) moulded and potted parts requirements of 6.7.2.2.2		N/A
	c) inner layers of printed wiring boards requirements of 6.7.2.2.3		N/A
	d) thin-film insulation requirements of 6.7.2.2.4		P
6.7.2.2.2	Moulded and potted parts		—
	Conductors between same two layers are separated by at least 0,4 mm after moulding is completed		N/A
6.7.2.2.3	Inner insulating layers of printed wiring boards		—

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Clause	Requirement - Test	Result - Remark	Verdict
	Separated by at least 0,4 mm between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness of insulation is at least 0,4 mm		N/A
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	c) insulation is assembled of minimum two separate layers, where the combination is rated for test voltage of Table 5 for REINFORCED INSULATION		N/A
6.7.2.2.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.2.1		P
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness through the insulation at least 0,4 mm		N/A
	b) insulation is assembled of min two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	c) insulation is assembled of min three separate layers, where the combination of two layers passed voltage tests of 6.8.3 with values of Table 5 for REINFORCED INSULATION	(see Form A.18)	P
6.7.3	Insulation for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V		P
6.7.3.1	Secondary circuits where separation from MAINS CIRCUITS is achieved by a transformer providing:		—
	– REINFORCED INSULATION		P
	– DOUBLE INSULATION		P
	– screen connected to the PROTECTIVE CONDUCTOR TERMINAL		N/A
6.7.3.2	CLEARANCES		—
	a) meet the values of Table 6 for BASIC INSULATION and SUPPLEMENTARY INSULATION; or		P

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Clause	Requirement - Test	Result - Remark	Verdict
	twice the values of Table 6 for REINFORCED INSULATION		P
	or		—
	b) pass the voltage tests of 6.8 with values of Table 6;		—
	with following adjustments:		—
	1) values for reinforced insulation are 1,6 times the values for basic insulation		N/A
	2) if operating altitude is greater than 2000 m values of CLEARANCES multiplied with factor of Table 3		N/A
	3) minimum CLEARANCE is 0,2 mm for POLLUTION DEGREE 2 and 0,8 mm for POLLUTION DEGREE 3		N/A
6.7.3.3	CREEPAGE DISTANCES		—
	Based on WORKING VOLTAGE meets the values of Table 7 for BASIC and SUPPLEMENTARY INSULATION		P
	Values for REINFORCED INSULATION are twice the values of BASIC INSULATION		P
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.3.4	Solid insulation		—
6.7.3.4.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		—
	a) Equipment passed voltage test of 6.8.3.1 for 5 s with VALUES of Table 6 for BASIC and SUPPLEMENTARY INSULATION		P
	values for REINFORCED INSULATION are 1,6 times the values of BASIC INSULATION		P
	b) if WORKING VOLTAGE exceeds300 V, equipment passed voltage test of 6.8.3.1 for 1 min with a test voltage of 1,5 times working voltage for BASIC or SUPPLEMENTARY INSULATION		P
	value for REINFORCED INSULATION are twice the WORKING VOLTAG		P
	Complies as applicable:		—
	1) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		P

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Clause	Requirement - Test	Result - Remark	Verdict
	2) moulded and potted parts requirements of 6.7.3.4.2		N/A
	3) inner layers of printed wiring boards requirements of 6.7.3.4.3		N/A
	4) thin-film insulation requirements of 6.7.3.4.4		P
6.7.3.4.2	Moulded and potted parts		—
	Conductors between same two layers are separated by applicable distancesof Table 8		N/A
6.7.3.4.3	Inner insulation layers of printed wiring boards		—
	Separated by at least by applicable distancesof Table 8 between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		N/A
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N/A
	c) insulation is assembled of min two separate layers, where the combination is RATED for 1,6 times the test voltage of Table 6		N/A
6.7.3.4.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.3.2 and 6.7.3.3		P
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		P
	b) insulation is assembled of min. two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		P
	c) insulation is assembled of min. three separate layers, where the combination of two layers passed voltage tests with 1,6 time values of Table 6:	(see Form A.18)	—
	a.c. test of 6.8.3.1; or		P
	d.c. test of 6.8.3.2 for circuits stressed only by d.c. voltages		N/A
6.8	Procedure for dielectric strength tests	(see Form A.14 and A.18)	P

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Clause	Requirement - Test	Result - Remark	Verdict
6.9	Constructional requirements for protection against electric shock		P
6.9.1	If a failure could cause a HAZARD:		—
	a) security of wiring connections		P
	b) screws securing removable covers		P
	c) accidental loosening		P
	d) CLEARANCES and CREEPAGE DISTANCES not reduced below the values of basic insulation by loosening of parts or wires		P
6.9.2	Insulating materials		P
	Material not to be used for safety relevant insulation:		—
	a) easily damaged materials not used		P
	b) non-impregnated hygroscopic materials not used		P
6.9.3	Colour coding		P
	Green-and-yellow insulation shall not be used except:		—
	a) protective earth conductors;		P
	b) PROTECTIVE BONDING conductors;		N/A
	c) potential equalization conductors;		N/A
	d) functional earth conductors		N/A
6.10	Connection to MAINS supply source and connections between parts of equipment		P
6.10.1	MAINS supply cords		—
	RATED for maximum equipment current (see 5.1.3 c)		P
	Cable complies with IEC 60227 or IEC 60245		P
	Heat-resistant if likely to contact hot parts		P
	Temperature RATING (cord and inlet).....:		—
	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS		P
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		N/A
	Have the current RATING of the MAINS connector		P

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Clause	Requirement - Test	Result - Remark	Verdict
6.10.2	Fitting of non-detachable MAINS supply cords		—
6.10.2.1	Cord entry		—
	a) inlet or bushing with a smoothly rounded opening; or		P
	b) insulated cord guard protruding >5 D (diameter)		N/A
6.10.2.2	Cord anchorage		—
	Protective earth conductor is the last to take the strain		N/A
	a) cord is not clamped by direct pressure from a screw		N/A
	b) knots are not used		N/A
	c) cannot push the cord into the equipment to cause a HAZARD		N/A
	d) no failure of cord insulation in anchorage with metal parts		N/A
	e) not to be loosened without a tool		N/A
	f) cord replacement does not cause a HAZARD and method of strain relief is clear		N/A
	Push-pull and or torque test		N/A
6.10.3	Plugs and connectors		P
	MAINS supply plugs, connectors etc., conform with relevant specifications		P
	If equipment supplied at voltages below 6.3.2.a) or from a sole source:		—
	Plugs of supply cords do not fit MAINS sockets above rated SUPPLY voltage		N/A
	MAINS type plugs used only for connection to MAINS supply		P
	Plug pins which receive a charge from an internal capacitor		N/A
	Accessory MAINS socket outlets:		—
	a) marking if accepts a standard MAINS supply plug (see 5.1.3e)		N/A
	b) input has a protective earth conductor if outlet has EARTH TERMINAL CONTACT		N/A
6.11	Disconnection from supply source		P
6.11.1	Disconnects all current-carrying conductors		P
6.11.2	Exceptions		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
6.11.3	Requirements according to type of equipment		—
6.11.3.1	PERMANENTLY CONNECTED EQUIPMENT and multi-phase equipment		N/A
	Employs switch or circuit-breaker		N/A
	If switch or circuit-breaker is not part of the equipment, documentation requires:		—
	a) switch or circuit-breaker to be included in building installation		N/A
	b) suitable location easily reached		N/A
	c) marking as disconnecting for the equipment		N/A
6.11.3.2	Single-phase cord-connected equipment		P
	Equipment is provided with one of the following:		—
	a) switch or circuit-breaker		N/A
	b) appliance coupler (disconnectable without tool)		P
	c) separable plug (without locking device)		N/A
6.11.4	Disconnecting devices		P
6.11.4.1	Disconnecting device part of equipment		P
	Electrically close to the SUPPLY		P
	Power-consuming components not electrically located between the supply source and the disconnecting device		N/A
	Except electromagnetic interference suppression circuits permitted to be located on the supply side of the disconnecting device		N/A
6.11.4.2	Switches and circuit-breakers		N/A
	When used as disconnection device:		—
	Meets IEC 60947-2 and IEC 60947-3		N/A
	Marked to indicate function .....:		—
	Not incorporated in MAINS cord		N/A
	Does not interrupt PROTECTIVE EARTH CONDUCTOR		N/A
6.11.4.3	Appliance couplers and plugs		P
	Where an appliance coupler or separable plug is used as the disconnecting device (see 6.11.3.2):		—
	Readily identifiable and easily reached by the operator		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Single-phase portable equipment cord length not more than 3 m		N/A
	PROTECTIVE EARTH CONDUCTOR connected first and disconnected last		P
7	**Protection against mechanical HAZARDS**		
7.1	Equipment does not cause a mechanical HAZARD in NORMAL nor in SINGLE FAULT CONDITION		P
	Conformity is checked by 7.2 to 7.7		P
7.2	Sharp edges		P
	Easily touched parts are smooth and rounded		P
	Do not cause injury during NORMAL USE and		P
	Do not cause injury during SINGLE FAULT CONDITION		P
7.3	Moving parts		N/A
7.3.1	HAZARDS from moving parts limited to a tolerable level with the conditions specified in 7.3.2 and 7.3.5		N/A
	RISK assessment in accordance with 7.3.3 carried out		N/A
7.3.2	Exceptions		N/A
	Access to HAZARDOUS moving parts permitted under following circumstances:		—
	a) obviously intended to operate on parts or materials external of the equipment		N/A
	inadvertent touching of moving parts minimized by equipment design (e .g. guards or handles)		N/A
	b) If OPERATOR access is unavoidable outside NORMAL USE following precautions have been taken:		—
	1) access requires TOOL		N/A
	2) statement about training in the instructions		N/A
	3) warning markings on covers prohibiting access by untrained OPERATORS		N/A
	or symbol 14 with full details in documentation		N/A
7.3.3	RISK assessment for mechanical HAZARDS to body parts		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	RISK is reduced to a tolerable level by protective measures as specified in table 12		N/A
	Minimum protective measures:		—
	A. Low level measures		N/A
	B. Moderate measures		N/A
	C. Stringent measures		N/A
7.3.4	Limitation of force and pressure		N/A
	Following levels are met in NORMAL and SINGLE FAULT CONDITION:		—
	Continuous contact pressure below 50 N / cm² with force below 150 N		N/A
	Temporary force below 250 N for an area at least of 3 cm² for a maximum duration of 0,75 s		N/A
7.3.5	Gap limitations between moving parts		N/A
7.3.5.1	Access normally allowed		—
	If levels of 7.3.4 exceeded and body part may be inserted minimum gap as specified in table 13 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.3.5.2	Access normally prevented		—
	Maximum gap as specified in table 14 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.4	Stability		P
	Equipment not secured to building structure is physical stable		P
	Stability maintained after opening of drawers etc. by automatic means, or		N/A
	warning marking requires the application of means		N/A
	Compliance checked by following tests as applicable:		—
	a) 10° tilt test for other than handheld equipment		P
	b) multi-directional force test for equipment exceeds height of 1 m and mass of 25 kg		N/A
	c) downward force test for floor-standing equipment		N/A
	d) overload test with 4 times maximum load for castor or support that supports greatest load		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	e) castor or support that supports greatest load removed from equipment		N/A
7.5	Provisions for lifting and carrying		N/A
7.5.1	Equipment more than 18 kg:		—
	Has means for lifting or carrying; or		N/A
	Directions in documentation		N/A
7.5.2	Handles and grips		—
	Handles or grips withstand four times weight		N/A
7.5.3	Lifting devices and supporting parts		—
	RATED for maximum load; or		N/A
	tested with four times maximum static load		N/A
7.6	Wall mounting		P
	Mounting brackets withstand four times weight		P
7.7	Expelled parts		N/A
	Equipment contains or limits the energy		N/A
	Protection not removable without the aid of a tool		N/A
8	**Resistance to mechanical stresses**		
8.1	Equipment does not cause a HAZARD when subjected to mechanical stresses in NORMAL USE		P
	Normal protection level is 5 J		P
	Levels below 5 J but not less than 1 J are acceptable if all of following criteria are met:		—
	a) lower level justified by RISK assessment of manufacturer		P
	b) equipment installed in its intended application is not easily touched		P
	c) only occasional access during NORMAL USE		P
	d) IK code in accordance to IEC 62262 marked or symbol 14 used with full information in the documentation		P
	for non-metallic ENCLOSURES rated below 2 °C ambient temperature value chosen for minimum RATED temperature		N/A
	impact energies between IK values, the IK code marked for nearest lower value		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Conformity is checked by performing following tests:		—
	1) static test of 8.2.1		P
	2) impact test of 8.2.2 with 5 J except for HAND-HELD EQUIPMENT		P
	if impact energy not selected to 5 J alternate method of IEC 62262 used		N/A
	3) drop test of 8.3.1 or 8.3.2 except for FIXED EQUIPMENT and equipment with mass over 100 kg		N/A
	Equipment RATED with an impact rating of IK 08 that obviously meets the criteria		P
	After the tests inspection with following results:		—
	– HAZARDOUS LIVE parts above the limits of 6.3.2 not ACCESSIBLE		P
	– insulation pass the voltage tests of 6.8		P
	i) no leaks of corrosive and harmful substances		P
	ii) ENCLOSURE shows no cracks resulting in a HAZARD		P
	iii) CLEARANCES not less than their permitted values		P
	iv) insulation of internal wiring remains undamaged		P
	v) PROTECTIVE BARRIERS not damaged or loosened		P
	vi) No moving parts exposed, except permitted by 7.3		P
	vii) no damage which could cause spread of fire		P
8.2	ENCLOSURE rigidity test		P
8.2.1	Static test	(see Form A.21A)	P
	– 30 N with 12 mm rod to each part of ENCLOSURE		P
	– in case of doubt test conducted at maximum RATED ambient temperature		P
8.2.2	Impact test	(see Form A.21A)	P
	Impact applied to any part of ENCLOSURE causing a HAZARD if damaged		P
	Impact energy level and corresponding IK code ..:		—

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Clause	Requirement - Test	Result - Remark	Verdict
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		N/A
8.3	Drop test	(see Form A.21B)	P
8.3.1	Other than HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		P
	Tests conducted with a drop height or angle of ....:		—
8.3.2	HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		—
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		N/A
	Drop test conducted with an height of 1 m		N/A
9	**Protection against the spread of fire**		
9.1	No spread of fire in NORMAL and SINGLE FAULT CONDITION		P
	MAINS supplied equipment meets requirements of 9.6 additionally		P
	Conformity is checked by minimum one or a combination of the following (see Figure 11):		—
	a) SINGLE FAULT test of 4.4; or		P
	b) Application of 9.2 (eliminating or reducing the sources of ignition); or		P
	c) Application of 9.3 (containment of fire within the equipment)		P
9.2	Eliminating or reducing the sources of ignition within the equipment		P
	a) 1) Limited-energy circuit (see 9.4); or		P
	2) BASIC INSULATION provided for parts of different potential; or		P
	Bridging the insulation does not cause ignition		N/A
	b) Surface temperature of liquids and parts (see 9.5)		N/A
	c) No ignition in circuits designed to produce heat		P
9.3	Containment of the fire within the equipment, should it occur		P
9.3.1	Spread of fire outside equipment reduced to a tolerable level if:		—
	a) Energizing of the equipment is controlled by an OPERATOR held switch		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	b) ENCLOSURE is conform with constructional requirements of 9.3.2; and		P
	Requirements of 9.5 are met		P
9.3.2	Constructional requirements		—
	a) Connectors and insulating material have flammability classification V-2 or better	(see TABLE 1)	P
	b) Insulated wires and cables are flame retardant (VW-1 or equivalent)	(see TABLE 1)	P
	c) ENCLOSURE meets following requirements:		—
	1) Bottom and sides in arc of 5 ° (see Figure 13) to non-limited circuits (9.4) meets:		—
	i) no openings; or		N/A
	ii) perforated as specified in table 16; or		N/A
	iii) metal screen with a mesh; or		N/A
	iv) baffles as specified in Figure 12		N/A
	2) Material of ENCLOSURE and any baffle or flame barrier is made of:		—
	Metal (except magnesium); or		P
	Non-metallic materials have flammability classification V-1 or better		N/A
	3) ENCLOSURE and any baffle or flame barrier have adequate rigidity		P
9.4	Limited-energy circuit		P
	a) Potential not more than 30V r.m.s. and 42,4 V peak, or 60 V dc		P
	b) Current limited by one of following means:		—
	1) Inherently or by impedance (see table 17); or		N/A
	2) Overcurrent protective device (see table 18); or		N/A
	3) A regulating network limits also in SINGLE FAULT CONDITION (see table 17)		P
	c) Is separated by at least BASIC INSULATION		N/A
	Fuse or a nonadjustable electromechanical device is used		N/A
9.5	Requirements for equipment containing or using flammable liquids		N/A
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire		N/A

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
	RISK is reduced to a tolerable level:		—
	a) The temperature of surface or parts in contact with flammable liquids is 25 °C below fire point		N/A
	b) The quantity of liquid is limited		N/A
	c) Flames are contained within the equipment		N/A
	Detailed instructions for RISK-reduction provided		N/A
9.6	Overcurrent protection		P
9.6.1	MAINS supplied equipment protected		P
	BASIC INSULATION between MAINS parts of opposite polarity provided	(see Form A.14 and A.15)	P
	Devices not in the protective conductor		P
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase)		P
9.6.2	PERMANENTLY CONNECTED EQUIPMENT		N/A
	Overcurrent protection device:		—
	Fitted within the equipment; or		N/A
	Specified in manufacturer's instructions		N/A
9.6.3	Other equipment		—
	Protection within the equipment		N/A
10	**Equipment temperature limits and resistance to heat**		
10.1	Surface temperature limits for protection against burns		P
	Easily touched surfaces within the limits in NORMAL and in SINGLE FAULT CONDITION:	(see Form A.26A)	—
	– at an specified ambient temperature of 40 °C		P
	– for equipment rated above 40 °C ambient temperature limits not exceeded raised by the difference to 40 °C		N/A
	Heated surfaces necessary for functional reasons exceeding specified values:		—
	– Are recognizable as such by appearance or function; or		P
	– Are marked with symbol 13		N/A
	– Guards are not removable without tool		N/A
10.2	Temperatures of windings		P

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Limits not exceeded in:		—
	NORMAL CONDITION		P
	SINGLE FAULT CONDITION		P
10.3	Other temperature measurements		P
	Following measurements conducted if applicable:	(see Form A.26A)	—
	a) Value of 60 °C of field-wiring terminal box not exceeded		N/A
	b) Surface of flammable liquids and parts in contact with this liquids		N/A
	c) Surface of non-metallic ENCLOSURES		N/A
	d) Parts made of insulating material supporting parts connected to MAINS supply		P
	e) Terminals carrying a current more than 0,5 A		P
10.4	Conduct of temperature tests		P
10.4.1	Tests conducted under reference test conditions and manufacturer's instructions	(see Form A.26A)	P
10.4.2	Temperature measurement of heating equipment		N/A
	Tests conducted in test corner		N/A
10.4.3	Equipment intended for installation in a cabinet or wall		P
	Equipment built in as specified in installation instructions	(see Form A.26A)	P
10.5	Resistance to heat		P
10.5.1	Integrity of CLEARANCE and CREEPAGE DISTANCES		P
10.5.2	Non-metallic ENCLOSURES		N/A
	Within 10 min after treatment:		—
	Equipment subjected to suitable stresses of 8.2 and 8.3 complying with criteria of 8.1		N/A
10.5.3	Insulating material		P
	a) Parts supporting parts connected to MAINS supply		P
	b) TERMINALS carrying a current more than 0,5 A		P
	Examination of material data; or		P
	in case of doubt:		P
	1) Ball pressure test; or	(see Form A.28)	P

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
	2) Vicat softening test of ISO 306		N/A
11	**Protection against HAZARDS from fluids and solid foreign objects**		
11.1	Protection to OPERATORS and surrounding area provided by EQUIPMENT		N/A
	All fluids specified by manufacturer considered		N/A
11.2	Cleaning		N/A
11.3	Spillage		N/A
11.4	Overflow		N/A
11.5	Battery electrolyte		N/A
	Battery electrolyte leakage presents no HAZARD		N/A
11.6	Specially protected equipment		N/A
11.7	Fluid pressure and leakage		N/A
11.7.1	Maximum pressure.....:		—
	Maximum pressure of any part does not exceed P_{RATED}		N/A
11.7.2	Leakage and rupture at high pressure		—
	Fluid-containing parts subjected to hydraulic test if.....		N/A
	a) product of pressure and volume > 200 kPal; and		N/A
	b) pressure > 50 kPa		N/A
	Parts of refrigerating systems meets pressure related requirements of EN 378-2 or IEC 60335-2-89		N/A
11.7.3	Leakage from low-pressure parts		N/A
11.7.4	Overpressure safety device		N/A
	Does not operate in NORMAL USE		N/A
	a) Connected as close as possible to parts intended to be protected		N/A
	b) Easy access for inspection, maintenance and repair		N/A
	c) Adjustment only with TOOL		N/A
	d) No discharge towards person		N/A
	e) No HAZARD from deposit of discharged material		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	f) Adequate discharge capacity		N/A
	No shut-off valve between overpressure safety device and protected parts		N/A
12	**Protection against radiation, including laser sources, and against sonic and ultrasonic pressure**		
12.1	Equipment provides protection		N/A
12.2	Equipment producing ionizing radiation		N/A
12.2.1	Ionizing radiation		N/A
12.2.1.1	Equipment meets the following requirements:		—
	a) if intended to emit radiation meets requirements of 12.2.1.2; or		N/A
	tested, classified and marked in accordance to IEC 62598		N/A
	b) if only emits stray radiation meets requirements of 12.2.1.3		N/A
12.2.1.2	Equipment intended to emit radiation		—
	Effective dose rate of radiation measured.....:		—
	If dose rate exceeds 5 µSv/h marked with the following:		—
	a) symbol 17 of Table		N/A
	b) abbreviations of the radionuclides.....:		—
	c) with maximum dose at 1 m; or .....:		—
	with dose rate value between 1 µSv/h and 5 µSv/h in m.....:		—
12.2.1.3	Equipment not intended to emit radiation		—
	Limit for unintended stray radiation of 1 µSv/h at any easily reached point kept .....:		—
12.2.2	Accelerated electrons		—
	Compartments opened only by the use of a TOOL		N/A
12.3	Optical radiation		N/A
	No unintentional HAZARDOUS escape of radiation:		—
	– checked by inspection; and		N/A
	– measurement of the optical radiation		N/A
12.4	Microwave radiation		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Power density does not exceed 10 W/m^2……..:		N/A
12.5	Sonic and ultrasonic pressure		N/A
12.5.1	Sound level		—
	No HAZARDOUS sound emission		N/A
	Maximum sound pressure level measured and calculated for maximum sound power level as specified in ISO 3746 or ISO 9614-1		N/A
	Instruction describes measures for protection		N/A
12.5.2	Ultrasonic pressure		N/A
	Equipment not intended to emit ultrasound does not exceed limit of 110 dB between 20 kHz and 100 kHz		N/A
	Equipment intended to emit ultrasound:		N/A
	Outside useful beam does not exceed limit of 110 dB between 20 kHz and 100 kHz		N/A
	If inside useful beam above values exceeded:		—
	Marked with Symbol 14 of table 1		N/A
	and following information in the documentation:		—
	a) dimensions of useful beam		N/A
	b) area where ultrasonic pressure exceed 110 dB		N/A
	c) maximum sound pressure inside beam area		N/A
12.6	Laser sources		N/A
	Equipment meets requirements of IEC 60825-1		N/A
13	**Protection against liberated gases and substances, explosion and implosion**		
13.1	Poisonous and injurious gases and substances		N/A
	No liberate dangerous amounts of hazardous substances in NORMAL CONDITION and in SINGLE FAULT CONDITION.		N/A
	OPERATOR not directly exposed to a quantity of the substance		N/A
	discharge not considered to be liberation of hazardous substances		N/A
	Attached data/test reports demonstrate conformity		N/A
13.2	Explosion and implosion		N/A
13.2.1	Components		N/A

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Components liable to explode:		—
	Pressure release device provided; or		N/A
	Apparatus incorporates operator protection (see also 7.7)		N/A
	Pressure release device:		—
	Discharge without danger		N/A
	Cannot be obstructed		N/A
13.2.2	Batteries and battery charging		—
	If explosion or fire HAZARD could occur:		—
	Protection incorporated in the equipment; or		N/A
	Instructions specify batteries with built-in protection		N/A
	In case of wrong type of battery used:		—
	No HAZARD; or		N/A
	Warning by marking and within instructions		N/A
	Equipment with means to charge rechargeable batteries:		—
	Warning against the charging of non-rechargeable batteries; and		N/A
	Type of rechargeable battery indicated; or		N/A
	Symbol 14 used		N/A
	Battery compartment design		N/A
	Single component failure		N/A
	Polarity reversal test		N/A
13.2.3	Implosion of cathode ray tubes		N/A
	If maximum face dimensions > 160 mm.....:		—
	Intrinsically protected and correctly mounted; or		N/A
	ENCLOSURE provides protection:		N/A
	If non-intrinsically protected:		—
	Screen not removable without TOOL		N/A
	If glass screen, not in contact with surface of tube		N/A
14	**Components and subassemblies**		
14.1	Where safety is involved, components and subassemblies meet relevant requirements	(see TABLE 1)	P

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Clause	Requirement - Test	Result - Remark	Verdict
14.2	Motors		N/A
14.2.1	Motor temperatures		N/A
	Does not present a HAZARD when stopped or prevented from starting; or		N/A
	Protected by over-temperature or thermal protection device conform with 14.3		N/A
14.2.2	Series excitation motors		N/A
	Connected direct to device, if overspeeding causes a HAZARD		N/A
14.3	Overtemperature protection devices		N/A
	Devices operating in a SINGLE FAULT CONDITION		N/A
	a) Reliable function is ensured		N/A
	b) RATED to interrupt maximum current and voltage		N/A
	c) Does not operate in NORMAL USE		N/A
	If self-resetting device used to prevent a HAZARD, protected part requires intervention before restarting		N/A
14.4	Fuse holders		N/A
	No access to HAZARDOUS LIVE parts		N/A
14.5	MAINS voltage selecting devices		N/A
	Accidental change not possible		N/A
14.6	MAINS transformers tested outside equipment		N/A
14.7	Printed circuit boards		P
	Data shows conformity with V-1 of IEC 60695-11-10 or better; or		P
	Test shows conformity with V-1 of IEC 60695-11-10 or better		N/A
	Not applicable for printed wiring boards with limited-energy circuits (9.4)		N/A
14.8	Circuits used to limit TRANSIENT OVERVOLTAGES		N/A
	Test conducted between each pair of MAINS SUPPLY TERMINALS		N/A
	The overvoltage limiting circuit components no ignite or heat other materials to their self-ignition points.		N/A

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
	The overvoltage limiting circuit safely suppress the impulse and continue to function properly after the test.		N/A
15	**Protection by interlocks**		
15.1	Interlocks are designed to remove a HAZARD before OPERATOR exposed		N/A
15.2	Prevention of reactivation		N/A
15.3	Reliability		N/A
	Single fault unlikely to occur; or		N/A
	Cannot cause a HAZARD		N/A
16	**HAZARDS resulting from application**		
16.1	REASONABLY FORESEEABLE MISUSE		P
	No HAZARDS arising from settings not intended and not described in the instructions		P
	Other cases of REASONABLY FORESEEABLE MISUSE addressed by RISK assessment		P
16.2	Ergonomic aspects		P
	Factors giving rise to a HAZARD the RISK assessment is reflecting those aspects:		—
	a) limitation of body dimensions		N/A
	b) displays and indicators		P
	c) accessibility and conventions of controls		P
	d) arrangement of TERMINALS		P
17	**RISK assessment**		
	RISK assessment conducted, if HAZARD might arise and not covered by Clauses 6 to 16	The applicant will separate to provide risk assessment document in the future.	N/A
	TOLERABLE RISK achieved by iterative documented process covering the following:	The applicant will separate to provide risk assessment document in the future.	—
	a) RISK analysis		N/A
	Identifies HAZARDS and estimates RISK		N/A
	b) RISK evaluation		N/A

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Plan to judge acceptability of resulting RISK level based on the estimated severity and likelihood of a RISK		N/A
	c) RISK reduction		N/A
	Initial RISK reduced by counter measures;		N/A
	Repeated RISK evaluation without new RISKS introduced		N/A
	RISKS remaining after RISK assessment addressed in instructions to RESPONSIBLE BODY:	The applicant will separate to provide risk assessment document in the future.	—
	Information contained how to mitigate these RISKS		N/A
	Following principles in methods of RISK reduction applied by manufacturer in given order:	The applicant will separate to provide risk assessment document in the future.	—
	1) RISKS eliminated or reduced as far as possible		N/A
	2) Protective measures taken for RISKS that cannot be eliminated		N/A
	3) User information about residual RISK due to any defect of the protective measures		N/A
	Indication of particular training is required		N/A
	Specification of the need for personal protective equipment		N/A
	Conformity checked by evaluation of the RISK assessment documentation		N/A
ANNEX F	ROUTINE TESTS		P
	Manufacturer´s declaration		P
ANNEX H	QUALIFICATION OF CONFORMAL COATINGS FOR PROTECTION AGAINST POLLUTION		N/A
H.1	General		N/A
	Conformal coatings meet the requirements of Clause H.2 and H.3		N/A
H.2	Technical properties		N/A
	Technical properties of conformal coatings are suitable for the intended application. In particular:		—
	a) Manufacturer indicate that it is a coating for PWBs;		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	b) RATED operating temperature include the temperature range of the indicated application;		N/A
	c) CTI, insulation resistance and dielectric strength are suitable for the intended application;		N/A
	d) Coating have adequate UV resistance, if it is exposed to sunlight;		N/A
	e) Flammability RATING of the coating is at least the required flammability RATING of the applied PWB.		N/A
H.3	Qualification of coatings		N/A
	Coating complies with the conformity requirements		N/A
ANNEX K	INSULATION REQUIREMENTS NOT COVERED BY CLAUSE 6.7		N/A

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict

6.5.2.2	TABLE: Cross-sectional area of bonding conductors	Form A.7	P
Conductor location		**CROSS-SECTIONAL AREA [mm²]**	
Protective bonding conductor		0.75	
Supplementary information:			

6.5.2.4	TABLE: Bonding impedance of plug connected equipment	Form A.9	N/A

ACCESSIBLE part under test	Test current [A]	Voltage attained after 1 min [V]	Calculated resistance (Maximum 0,1 or 0,2Ω) [Ω] (NOTE 1)
--	--	--	--

Supplementary information:

NOTE 1 – For none-detachable power cord the impedance between protective conductor plug pin of MAINS cord and each ACCESSIBLE part shall not exceed 0,2 Ohm.

6.7	TABLE: Insulation requirements- Block diagram of system	Form A.14	P
	Pollution degree..... :	2	--
	Overvoltage category..... :	II	--

Area	Location	Insulation type	WORKING VOLTAGE			Test voltage	Comments
		(NOTE 1)	RMS [V]	Peak [V]	Frequency [kHz]	(NOTE 2) [V]	(NOTE 3)
A	Power supply board to metal enclosure	BI	256	442	--	--	Pollution degree 2, Overvoltage category II
B	Primary component to Secondary component	RI	256	442	--	--	Pollution degree 2, Overvoltage category II

Supplementary information:

NOTE 1 – Type of insulation:
BI = BASIC INSULATION
DI = DOUBLE INSULATION
PI = PROTECTIVE IMPEDANCE
RI = Reinforced INSULATION
SI = Supplementary INSULATION
see also Form A.15 for further details

NOTE 2 - Types of voltage
Peak impulse test voltage (pulse)
r.m.s.
d.c.
peak

NOTE 3 - OVERVOLTAGE CATEGORIES or POLLUTION DEGREES which differ should be shown under "Comments"

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Clause	Requirement - Test	Result - Remark	Verdict

6.7	TABLE: Insulation requirementsClearances and Creepages								Form A.15	N/A
	supply voltage.....:				240V 60Hz					--
Area	Location	Insulation type (NOTE 1)	WORKING VOLTAGE (NOTE 2)			Clearance		Creepage		CTI	Comments
			RMS [V]	Peak [V]	Frequency [kHz]	Required[mm]	Measured[mm]	Required[mm]	Measured[mm]		
A	Power supply board to metal enclosure	BI	256	442	--	3.0	4.1	3.0	4.1	100	Pollution degree 2, Overvoltage category II
B	Primary component to Secondary component	RI	256	442	--	6.0	6.1	6.0	6.1	100	Pollution degree 2, Overvoltage category II
Supplementary information: NOTE 1 – refer to Form A.14 for type of insulation shown in the insulation diagram NOTE 2 – to be used for definition of required insulation (see Form A.14)											

6.8	TABLE: Dielectric strength tests	Form A.18	P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
L/N to metal enclosure		2100 Vdc	No
L/N to output terminal		4200 Vdc	No
Supplementary information:			

8.2	TABLE: ENCLOSURE rigidity test	Form A.21A	P
8.2.1	Static test		P
	Material of enclosure.....:	Metal	--
	Preparation for the test.....:	--	--
	Operated at ambient temperature.....:		--
Location		Comments	
1) Top side		No hazard, no damaged	
2) Front side		No hazard, no damaged	

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict

3) Right side	No hazard, no damaged
4) Left side	No hazard, no damaged
5) Rear side	No hazard, no damaged
6) Bottom side	No hazard, no damaged
Supplementary information:	

8.2.2	**TABLE: Dynamic test**		P
	Material of enclosure.....:	Metal	--
	Corresponding IK-code.....:	--	--
	Preparation for the test.....:		--
	Cooled to (temperature).....:	--	--
Location		Comments	
1) Top side		No hazard, no damaged	
2) Front side		No hazard, no damaged	
3) Right side		No hazard, no damaged	
4) Left side		No hazard, no damaged	
5) Rear side		No hazard, no damaged	
6) Bottom side		No hazard, no damaged	
Supplementary information:			

8.3	**TABLE: Drop test**		**Form A.21B**	P
8.3.1	Other equipment			--
Location	Raised up to		Comments	
	[mm]	30 °		
Normal use	100	--	No hazard, no damaged	
Supplementary information:				

10.5.3	**TABLE: Insulating Materials**		P
10.5.3 1)	**Ball-pressure test**	**Form A.28**	P
	Max. allowed impression diameter.....:	2 mm	--
Part	Test temperature [°C]	Impression diameter [mm]	
Outer shell	125	0.9	
Supplementary information:			

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UL 61010-1			
Clause	Requirement - Test	Result - Remark	Verdict

10.5.3 2)	**Vicat softening test (ISO 306)**	**Form A.29**	N/A
Part	Test temperature [°C]	Impression diameter [mm]	
--	--	--	
Supplementary information:			

TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1])
Cord sets	Dongguan Poweruan Wire Industrles Co.,Ltd.	LY-807+ EL701	AC250V, 2,5A	EN 60320-1	VDE*
Power plug	Dongguan Poweruan Wire Industrles Co.,Ltd.	LY-807	AC250V, 2,5A	VDE 0620-1	VDE 40049728
Power cord	Dongguan Poweruan Wire Industrles Co.,Ltd.	H03VVH2-F	2 x 0,75 mm²	EN 50525-2-11	VDE 0285-525-2-11
Two-pole connecter	Dongguan E-Jun Wire Co., LTD	EL-701	10A 250V	EN 60320-1:2015	4335284 01AOC
Appliance Inlet	Shenzhen shengqixin weiye technology co.LTD	DB-8	AC250V, 2,5A	EN 60320-1	VDE*
switch	DONGGUAN LIANYE ELECTRONICS CO., LTD	KBQ-02B	250V 20Ma T85 1E4 35 ±2KPa	EN IEC 61058-1:2018 EN 6158-1-1:2016	VDE*
Supplementary information: **[1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.**					

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 61010-1

US NATIONAL DIFFERENCES

Electrical Equipment For Measurement, Control, and Laboratory Use;
Part 1: General Requirements

Differences according to.....:	UL 61010-1:2012 Ed.3+R: Nov. 15, 2024

	USA National Differences		P
1.1.4DV	This equipment is employed in accordance with:		P
	a) the National Electrical Code (NEC), ANSI/NFPA 70		N/A
	b) Canadian Electrical Code (CEC) CAN/CSA C22.2 No. 0 and Part 1, CSA C22.1		N/A
	c) Both a) and b)		N/A
1.1.5DV.1	Gas, vapor and voltage detector or sensor The equipment measures, senses or detects one or more electrical or physical quantities that identify an imminent hazard and used for signalling are not to be evaluated to UL 61010-1 when another standard applies.		N/A
5.1.3DV	The measurement is made at each rated voltage range with the equipment consuming, where the measured power or current is the steady-state current is taken as the mean indication of the highest measured r.m.s. value during any 10 second period of the normal operation cycle.		N/A
5.4.4DV	Additional precautions for IEC 60950 or IEC 62368-1 conforming equipment in regard to moistures and liquids		N/A
6.5.2.4DV	Bonding impedance for plug connected equipment		N/A
	Voltage drop between the protective conductor terminal and each accessible parts for protective bonding less than 4 V		N/A
	Metal parts of the protective bond shall not melt; and		N/A
	Heating and burning shall not causing a fire hazard.		N/A
6.5.2.4DV.1	Duration of test in accordance to Table 6.5.2.4DV.1		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
6.5.2.5DV	Voltage drop between the protective conductor terminal and each accessible parts for protective bonding less than 4 V		N/A
	Test duration in accordance to table 6.5.2.4.DV.1		N/A
6.7.3.4.1DV	For solid insulation the equivalent d.c. voltage test values for an a.c. circuit was used		N/A
6.7.3.4.4DV	For thin film insulation the equivalent d.c. voltage test values for an a.c. circuit was used		N/A
6.10.1DV	Mains supply cords		N/A
6.10.1DV.1	Compliance with IEC 60227 or IEC 60245 not required		N/A
6.10.1DV.2	Green covered conductors (with or without yellow stripes) used only for connection to protective conductor terminals		N/A
6.10.1DV.3	Compliance with IEC 60799 not required		N/A
6.10.1DV.4	The cord or cord set complies with ANSI/UL 817 and CSA C22.2 No. 21		N/A
	Receptacles, plugs, wiring devices comply with ANSI/UL 498 and CSA C22.2 No. 42, No. 182.1, No.182.2, and No. 182.3		N/A
6.10.3DV	Plugs comply with ANSI/UL 498 and CSA C22.2 No. 42, No. 182.1, No.182.2, and No. 182.3		N/A
6.10.4DV	Permanently connected equipment		N/A
6.10.4DV.1	Requirements for permanent connection to mains comply with Annex DVD and Annex DVE		N/A
6.11DV	Disconnection from Supply Source and maintaining polarity		—
6.11.5DV	Polarity of Connections to the MAINS Circuit		N/A
6.11.5DV.1	Single-pole devices connected to ungrounded conductor of supply circuit		N/A
8.1DV	The normal energy protection level required:		N/A
	- 6.8J for PERMANENTLY CONNECTED EQUIPMENT and floor-standing equipment; and		N/A
	- 5J for all other equipment.		N/A
	Levels below 5 J, but not less than 1 J, are permitted provided all the criteria are met.		N/A
Table 15DV	Impact energy levels, test height and corresponding IK codes		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
9.3.2DV.1	Flame RATINGS of ANSI/UL 94 V-0, V-1, and V-2 are equivalent to the flammability classifications of IEC 60695-11-10.		N/A
9.3.2DV.3	Enclosures complying with UL 50 and UL 50E or CSA C22.2 No. 94.1 and CSA C22.2 No. 94.2 for the intended application, other than Type 1, are deemed to meet this requirement.		N/A
9.3.2DV.4	Flammabiity RATINGS V-0, V-1, and V-2 of UL 94 or CSA C22.2 No.0.17, or end product flame tests (12 mm or 15 mm) of UL 746C are equivalent to the same classifications of IEC 60695-11-10.		N/A
9.6.1ADV	Overcurrent Protection		N/A
9.6.1ADV.1	A single-pole circuit breaker connected in ungrounded conductor		N/A
9.6.1ADV.2	A multiple-pole circuit breaker interrupts both neutral and ungrounded conductors simultaneously		N/A
9.6.1ADV.3	Single fuse connected in the ungrounded supply conductor		N/A
9.6.1ADV.4	Fuses used in both conductors are mounted adjacent to each other and are of the same RATING and characteristics		N/A
9.6.1ADV.5	Screw shell of fuseholder and ACCESSIBLE contact of extractor fuseholder connected ungrounded supply conductor are located towards the load		N/A
	Screw shell of fuseholder or ACCESSIBLE contact of extractor fuseholder connected in neutral (grounded) conductor are located towards the grounded supply line		N/A
10.4.4DV.1	Open type equipment		N/A
	Open equipment is tested within an enclosure with dimensions as specified in the open equipment's installation instructions or tested under the referenced test ambient condition.		N/A
10.4.4DV.2	Equipment intended for permanent installation		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
	Permanently installed equipment is tested with a minimum of 1.22 m (4 ft) of wire when connecting to field-wiring terminal. Wire size is determined in accordance with Table 310-15(B) of NFPA 70, and Tables 1 to 5 of CSA C22.1. The size is based upon wire that is rated for a temperature of 60 °C (140 °F) for connection to a branch circuit with a rating of 100 amperes or less, and upon wire that is rated per the 75 °C (167 °F) column for a rating greater than 100 amperes.		N/A
11.6DV	Replace IP code with IP code and Type rating		—
11.6.1DV	IEC 60529 rating and marking replaced by CSA C22.2 No. 60529, IEC 60529, UL 50E or CSA C22.2 No. 94.2		N/A
11.6.3DV	IEC 60529 rating and marking replaced by CSA C22.2 No. 60529, IEC 60529, UL 50E or CSA C22.2 No. 94.2		N/A
11.6.4DV	IEC 60529 rating and marking replaced by CSA C22.2 No. 60529, IEC 60529, UL 50E or CSA C22.2 No. 94.2		N/A
11.7.1DV	Annex G for certain types of products		N/A
11.7.1DV.1	Equipment having both of the following characteristics meet the requirements of 11.7.2 and G.5:		N/A
	a) A product of pressure and volume greater than 200 kPa•l,		N/A
	b) A pressure greater than 50 kPa.		N/A
11.7.1DV.2	Laboratory and test and measurement equipment with other characteristics meet the requirements of 11.7.3 and 11.7.4		N/A
11.7.1DV.3	Equipment other than laboratory, testing and measurement equipment meet the requirements of Annex G		N/A
11.7.1DV.4	Requirements of 11.7.2 to 11.7.4 and / or Annex G fulfilled		N/A
11.7.2DV	NOTE National authorities may allow safety to be established by calculation, for example according to the ASME Boiler and Pressure Vessel Code.		—
12.1DV	X-ray and laser equipment are within the scope Radiation Emitting Device Act		—
12.3DV	NOTE 2A: ACIGH UV Guidelines, UL 746C and CSA C.22.2 No. 0.17 guidance applied		—

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
13.2.3DV	Conformity for cathode-ray tubes is checked as specified in IEC 60065 or IEC 62368-1.		N/A
14.1DV.0	NOTE if components meet the safety requirements of IEC 60950-1 or IEC 62368-1.		N/A
14.1DV.1	Components comply with applicable safety requirements of relevant ANSI, CAN, CSA, IEC, ISO or UL standards		N/A
14.1DV.2	Components comply with applicable safety requirements of relevant ANSI, CAN, CSA, IEC, ISO or UL standards		N/A
14.1DV.3	Components comply with applicable safety requirements of relevant ANSI, CAN, CSA, IEC, ISO or UL standards		N/A
14.1DV.4	Components comply with applicable safety requirements of relevant ANSI, CAN, CSA, IEC, ISO or UL standards		N/A
14.7DV	Flame RATINGS of ANSI/UL 94 and CAN/CSA C22.2 No. 0.17, V-0, V-1, and V-2, are equivalent to the flammability classifications of IEC 60695-11-10.		N/A
14.9DV	Outdoor-use enclosure resistance to UV		N/A
14.9DV.1	Enclosures intended for outdoor use		N/A
14.9DV.1.1	Nonmetallic enclosures meet the UV resistance requirements of ANSI/UL 746C or of CSA C22.2 No. 0.17, or both as appropriate		N/A
14.9DV.1.2	Permanent installed equipment for outdoor use meet relevant installation code requirements and be of a Type rating recognized for the intended use as specified in CSA C22.1 CEC, Part 1 and/or NFPA, NEC, as applicable.		N/A
14.10DV	EMC coatings, shield, and tape		N/A
14.10DV.1	Conductive coatings:		N/A
14.10DV.1.1	The bond of a conductive coating applied to a polymeric part was evaluated:		N/A
14.10DV.1.2	Conforms with a) the requirements for “Adhesives” in ANSI/UL 746C and/or CSA C22.2 No. 0.17, or b) peeling or flaking of the coating does not reduce spacings or bridge live parts so as to introduce a risk of fire or electric shock.		—
14.10DV.2	Conductive shield or tape:		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
14.10DV.2.1	Peeling of the conductive shield or tape does not introduce risk of fire or electric shock		N/A
	Bond between a conductive shield or tape and any other surface was evaluated		N/A
14.10DV.2.2	conforms		—
14.11DV	Direct plug-in transformers		N/A
14.11DV.1	Units met the additional requirements according to ANSI/UL 1310, CAN/CSA C22.2 No. 223, ANSI/UL 60950-1, or CSA C22.2 No. 60950-1.		N/A
ANNEX G	Leakage and rupture from fluids under pressure		N/A
GDV D2	Normative Refer to 11.7.1DV for cases in which Annex G apply.		—
ANNEX K	Insulation requirements not covered by 6.7		
K.1.3.1 DV	A DC voltage of √2 times the a.c. r.m.s. test voltage is acceptable.		—
K.1.3.4DV	A DC voltage of √2 times the a.c. r.m.s. test voltage is acceptable.		—
K.2.4.1DV	A DC voltage of √2 times the a.c. r.m.s. test voltage is acceptable for item a)		—
K.2.4.4DV	A DC voltage of √2 times the a.c. r.m.s. test voltage is acceptable.		—
K.3.2DV	A DC voltage of √2 times the a.c. r.m.s. test voltage is acceptable.		—
Annex DVB	Informative national differences clause list		N/A
Annex DVC	Informative UV radiation limits		N/A
DVC.1	General		N/A
DVC.1.1	The threshold limit values (TLVs) comply with the spectral region between 180 and 400 nm.		N/A
DVC.1.2	The values apply to UV radiation, but not to UV lasers (see TLV for laser).		N/A
	The duration of exposure is not less than 0.1 sec.		N/A
DVC.2	Recommended values		N/A
DVC.2.1	The TLVs for occupational exposure to UV radiation incident upon skin or eye where irradiance values are known, and exposure time is controlled are as follows:		N/A
	UV-A (315 to 400 nm) radiation to unprotected eye:		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
	Total energy not exceed 1 J/cm² (1000 mJ/cm²) for less than 1000s.		N/A
	Power not exceed 1 mW/cm² for greater than 1000s, and		N/A
	No 1000s time period should present a total energy that exceeds 1 J/cm² (1000 mJ/cm²)		N/A
	For monochromatic sources, the TVL for exposure to the unprotected skin or eye not exceeded within an 8-hour period, acc. to Table DVC.2.1.1.		N/A
	For broad-spectrum or multi-peak sources, the TVL for exposure of the unprotected skin or eye was calculated.		N/A
	For white-light sources and all open arcs, the spectral irradiance between 200 and 315 nm determine the effective irradiance.		N/A
	UV sources which emit UV-A radiation require spectral weighting from 315 to 400 nm.		N/A
	TLVs for UV energy apply to sources which subtend an angle less than 80°.		N/A
	Sources which subtend a greater angle need to be measured only over an angle of 80°.		N/A
Annex DVD	Permanent connection to MAINS		N/A
DVD.1	General		N/A
DVD.1.1	Equipment has provision for connection of wiring system in accordance with ANSI/NFPA 70, NEC and/or with CSA C22.1, CEC Part 1		N/A
	Equipment meets the requirements of DVD.2 to DVD.3		N/A
DVD.1.2	Complies with DVD.2 to DVD.3		N/A
DVD.2	Wiring TERMINALS and leads		N/A
DVD.2.1	General		N/A
DVD.2.1.1	PERMANENTLY CONNECTED EQUIPMENT provided with TERMINALS or leads comply with am ampacity according to NEC and/or Canadian Electrical Code, Part I		N/A
DVD.2.1.2	Terminal or splice compartment encloses all field wiring terminals		N/A
	Equipment has a complete enclosure		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
DVD.2.1.3	Terminal or splice compartment in MAINS connections to PERMANENTLY CONNECTED EQUIPMENT is located so that:		N/A
	a) Internal wiring and electrical components not damaged while connections are being made		N/A
	b) Connection may be readily inspected after installation		N/A
DVD.2.1.4	Compliance is checked by inspection.		N/A
DVD.2.2	Wiring TERMINALS		N/A
DVD.2.2.1	Wiring terminals provided with effective connections		N/A
DVD.2.2.2	Wire binding screws for mains connection:		N/A
	a) M4 (No 6) for 2.1mm2 (14 AWG) or smaller wire		N/A
	b) M4.5 (No 8) for 3.3mm2 (12 AWG) or smaller wire		N/A
	c) M5 (No 10) for 5.3mm² (10 AWG) or smaller wire		N/A
DVD.2.2.3	Compliance with the requirements in this Clause is checked by inspection		N/A
DVD.2.3	Leads		N/A
DVD.2.3.1	Free length of lead inside compartment at least 6 inches (150mm)		N/A
DVD.2.3.2	Compliance is checked by inspection		N/A
DVD.2.4	Terminal and lead identification		N/A
DVD.2.4.1	Terminals and leads are suitably identified		N/A
DVD.2.4.2	Neutral (ground) conductor identified		N/A
	NOTE: A “grounded” supply conductor is connected to protective earth at some point in the building installation. It is sometimes called the “neutral conductor”.		N/A
DVD.2.4.3	A wiring terminal solely for neutral (grounded) MAINS conductor:		N/A
	- terminal is readily distinguishable from other terminals		N/A
	- terminal constructed of or plated with metal substantially white in colour or		N/A
	- terminal clearly identified by other manner		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
DVD.2.4.4	Neutral (grounded) MAINS conductor is readily distinguishable from other leads (white or natural grey colour)		N/A
DVD.2.4.5	Protective Grounding (earthing) terminal marked according to Cl. 5.1.5.2(b) or		N/A
	Protective Grounding (earthing) terminal marked with "G," "GR,", "GND," "GRD," "GROUND," or "GROUNDING" or		N/A
	Protective Grounding (earthing) terminal provided with green coloured screwhead that is hexagonal, slotted, or both		N/A
DVD.2.4.6	Protective Grounding (earthing) lead is readily distinguishable from other leads is green colour with or without yellow stripes		N/A
DVD.2.4.6A	Field-wiring terminal markings		N/A
DVD.2.4.6A.1	Equipment having field-wiring terminals marked:		N/A
	a) "Use Copper Conductors Only" if the terminal is only for connection to copper wire;		N/A
	b) "Use Copper or Copper-Clad Aluminum Conductors Only" if the terminal is only for connection to copper and copper-clad aluminum wire;		N/A
	c) "Use Aluminum Conductors Only" or "Use Aluminum or Copper-Clad Aluminum Conductors Only" if the terminal is only for connection to aluminum wire; and		N/A
	d) "Use Copper or Aluminum Conductors" or "Use Copper, Copper-Clad Aluminum, or Aluminum Conductors" if the terminal is for connection to either copper or aluminum wire.		N/A
DVD.2.4.6A.2	Alternatively, the markings in DVD.2.4.6A.1 may be abbreviated as follows:		N/A
	a) Equipment having a connector intended only for use with copper wire marked with the letters "CU".		N/A
	b) Equipment having a connector intended for use with copper-clad aluminum and copper wire marked "CC-CU" or "CU-CC".		N/A
	c) Equipment having a connector intended for use with aluminum or copper-clad aluminum and copper wire marked "AL -CU" or "CU-AL".		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
	d) Equipment having a connector intended only for use with aluminum wire marked with the letters "AL".		N/A
DVD.2.4.6A.3	The markings required by DVD.2.4.6A.1 to DVD.2.4.6A.2 may be in the installation instructions, provided the equipment is marked with a coded correlation marking referencing the installation instruction, or with the marking of Table 1, symbol 14.		N/A
DVD.2.4.7	Compliance with the requirements in this Clause is checked by inspection		N/A
DVD.3	Enclosure requirements for conduit entry		N/A
DVD.3.1	Tests performed without pulling apart, cracking or breaking and knockouts remaining in place		N/A
DVD.3.2	enclosures with sheet metal members with a thickness not less than:		N/A
	- 0.81 mm (uncoated sheet steel)		N/A
	- 0.86 mm (galvanized sheet steel)		N/A
	- 1.11 mm (sheet aluminum)		N/A
	- 1.09 mm (sheet copper or brass)		N/A
	NOTE ENCLOSURES complying with UL 50 and/or CSA C22.2 No. 94.1 are deemed to comply with DVD.4.1 and DVD.4.2.		N/A
DVD.3.3	enclosure made wholly or in part of insulating material provides continuity of bonding between all metallic conduits entering the enclosure.		N/A
DVD.3.4	Compliance with the requirements in this Clause is checked by performing the tests of DVD.4.		N/A
DVD.4	Conduit enclosure entry tests		N/A
DVD.4.1	Conduit pull-out test		N/A
DVD.4.1.1	Direct pulling force of 890 N (200 lb) on conduit for 5 min.		N/A
DVD.4.2	Conduit torque test		N/A
DVD.4.2.1	Tightening torque per Table DVD.4.2.1.1 apply		N/A
	22.6 Nm for an end-of-line enclosure		N/A
DVD.4.3	Bending		N/A
DVD.4.3.1	A length of conduit at least 300 mm (1 ft) long of the intended size shall be installed:		N/A
	a) In the centre of the largest unreinforced surface, or		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
	b) In a hub or an opening if provided as part of the enclosure		N/A
DVD.4.3.2	Bending moment for conduit openings per Table DVD.4.3.2.1 used		N/A
	The magnitude of the weight shall be determined from the equation: .....W = (M-0.5 *C*L) / L		N/A
DVD.4.3.3	Vertical bending moment value used		N/A
DVD.4.3.4	Deflection of conduit exceeds 250 mm (10 in) for a 3.05 m (10 ft) length of conduit		N/A
DVD.4.3.5	17 Nm (150 lb-in) for bending moment of end-of-line enclosure defined per Table DVD.4.2.1.1 used		N/A
DVD.4.4	Knockouts		N/A
DVD.4.4.1	Knockouts withstand force of 89 N (20 lb); applied at right angles by means of a mandrel with a 6.4 mm (1/4-in) diameter flat end.		N/A
	NOTE A knockout surrounded by multiple twistouts are covered by additional requirements in CSA C22.2 No.0.		N/A
DVD.5	Insulation requirements		N/A
DVD.5.1	Neutral conductors as part of the mains circuit, considered hazardous live.		N/A
Annex DVE	Permanently Installed Equipment [D2]		N/A
DVE 1	General		N/A
DVE.1.1	These requirements cover Permanently connected Metering equipment, including open-type current sensor, OPEN EQUIPMENT or enclosed-type intended for installation in accordance with the National Electrical Code, NFPA 70 and the Canadian Electrical Code, Part I, CSA C22.1.		N/A
DVE.1.2	Metering equipment, intended for aftermarket kit for field installation, shall meet these requirements and be additionally evaluated in accordance with ANSI/CAN/UL 2808 when intended for installation within distribution and control equipment such as panelboards and switchboards containing switches and overcurrent devices.		N/A
	Open-type current sensors when intended as an aftermarket kit for field installation shall meet these requirements and be additionally evaluated in accordance with ANSI/CAN/UL 2808.		N/A

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IEC61010_1P- ATTACHMENT 1			
Clause	Requirement - Test	Result - Remark	Verdict
DVE.1.2A	Metering equipment and open-type current sensors additionally evaluated for aftermarket kits for field installation shall be marked: “Field Installable Accessory" or“Kit Evaluated for Field Installation", or equivalent. Where there is insufficient space, Symbol 14 of Table 1 may be used with details included in the documentation.		N/A
DVE.1.3	Deleted		N/A
DVE.1.4	Deleted		N/A
DVE.1.5	Deleted		N/A
DVE.2	Deleted		N/A
DVE.3	Deleted		N/A
DVE.4	Deleted		N/A
DVE.5	Deleted		N/A
DVE.6	Deleted		N/A
DVE.7	Deleted		N/A
DVE.8	Components and subassemblies		N/A
DVE.8.1	Current transformers Accessory current sensors shall comply with ANSI/CAN/UL 2808		N/A
	Accessory current sensors shall comply with ANSI/CAN/UL 2808		N/A
DVE.8.1.1	Deleted		N/A
DVE.8.1.2	Deleted		N/A

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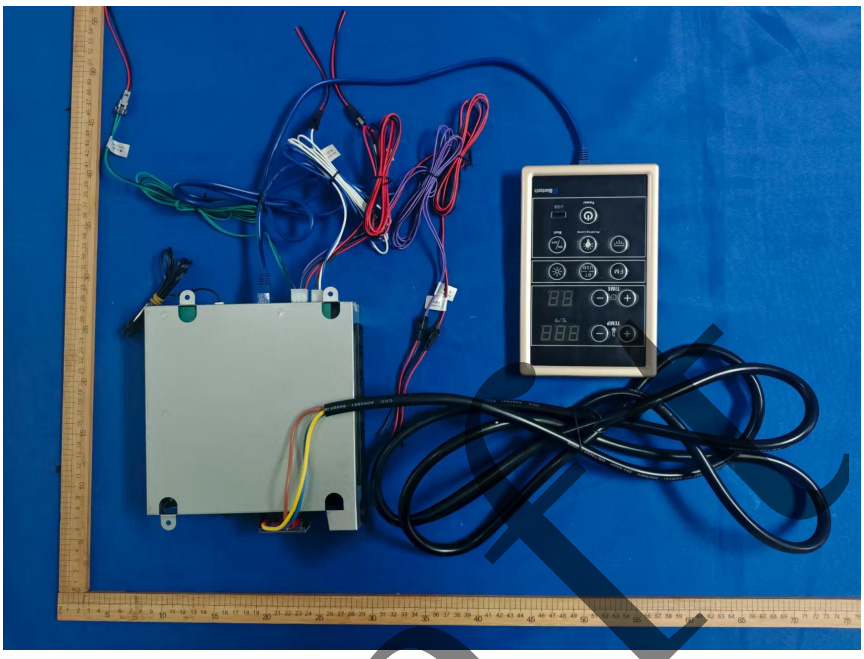
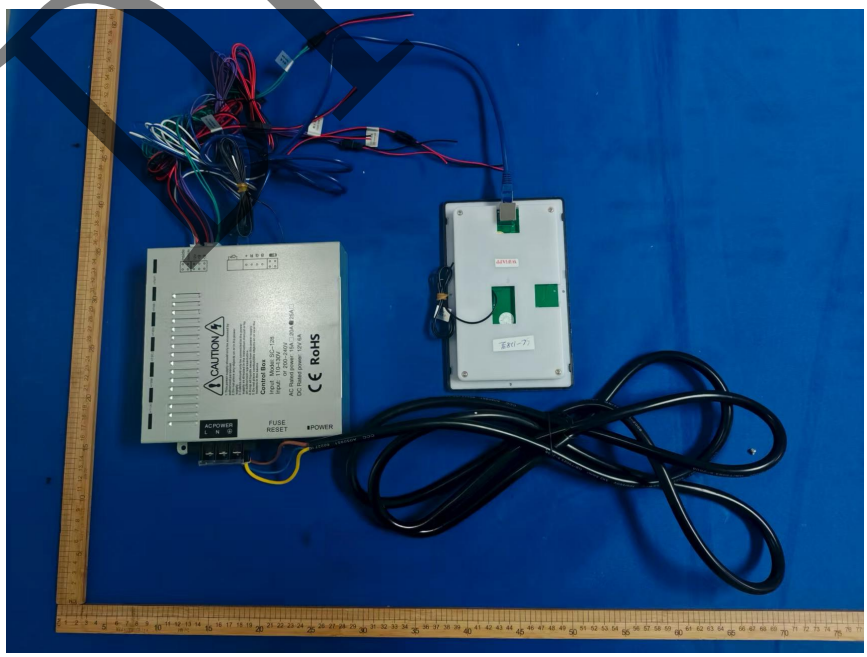
ATTACHMENT 2:

Photo-documentation

EUT Photo 1



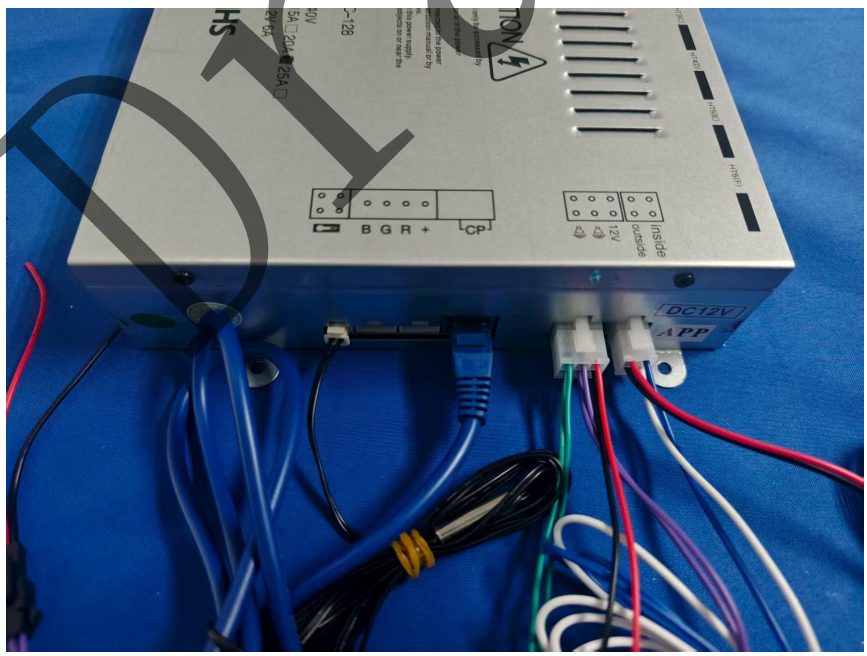
EUT Photo 2



Draft

EUT Photo 3

EUT Photo 4



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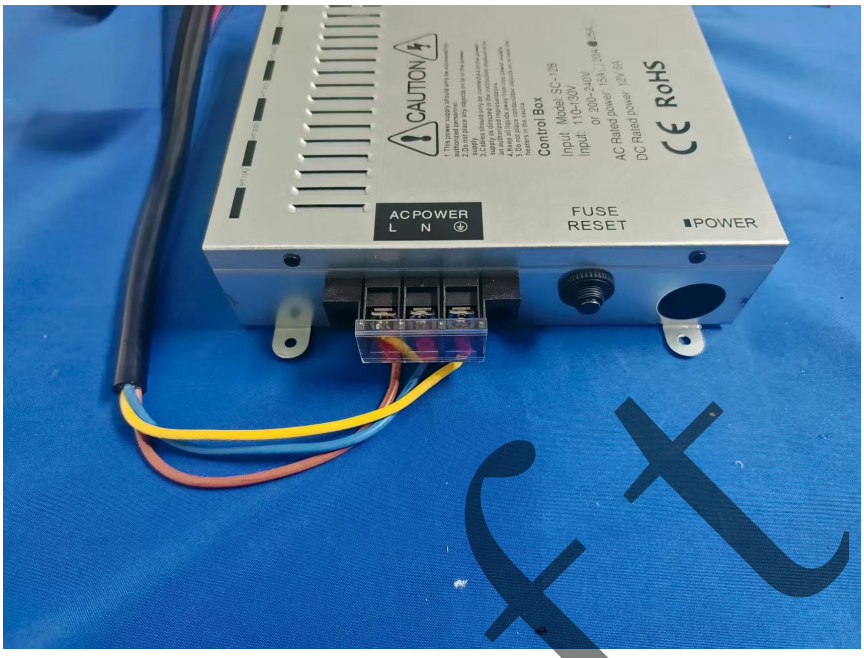
EUT Photo 5



EUT Photo 6

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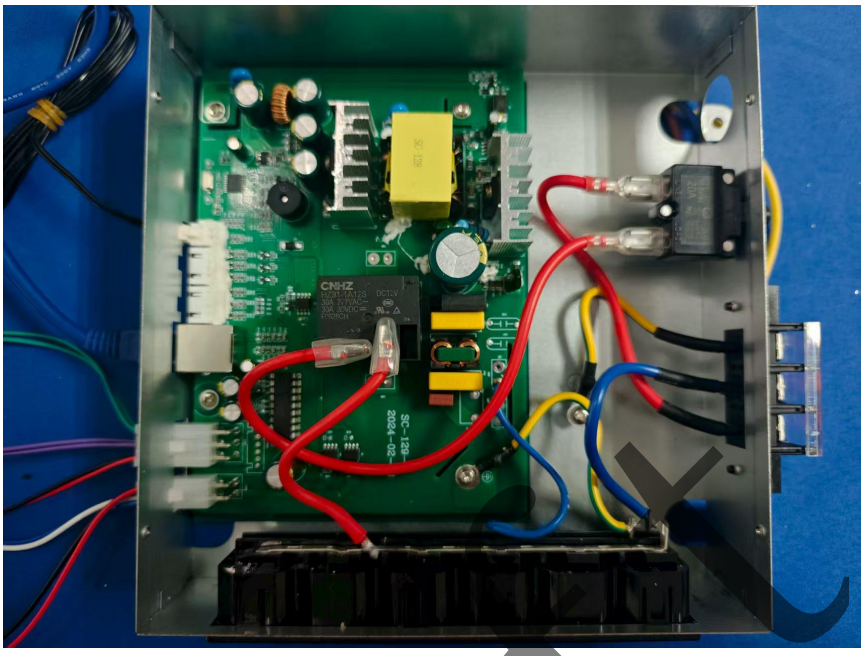
EUT Photo 7



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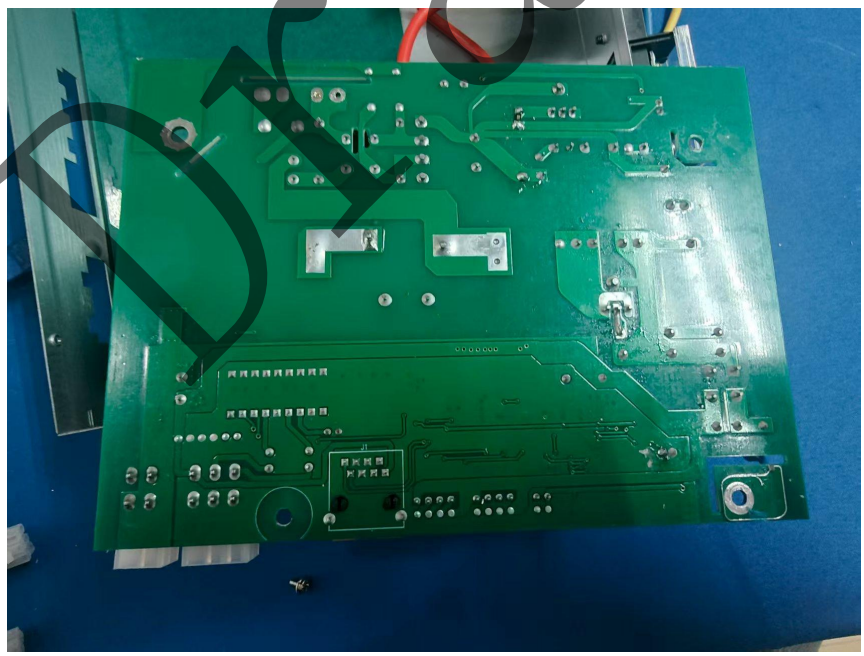

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EUT Photo 9

EUT Photo 10

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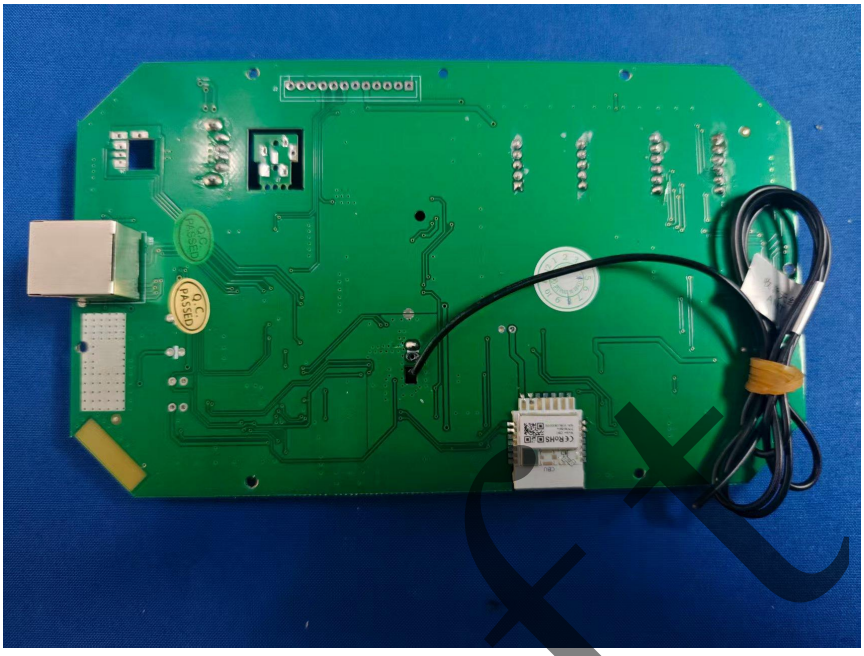
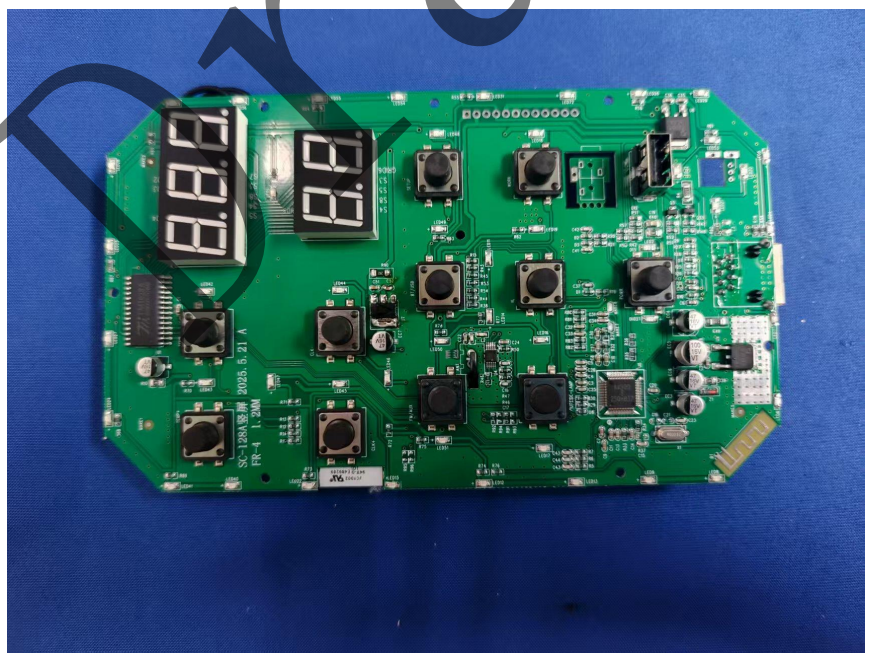
EUT Photo 11



EUT Photo 12



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